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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/626,839

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Ji-hyun In

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10/18/2006

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EXAMINER

BRADLEY, MATTHEW A

ART UNIT

PAPER NUMBER

2187

DATE MAILED: 10/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/626,839	Applicant(s) IN ET AL.	
	Examiner Matthew Bradley	Art Unit 2187	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 August 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 May 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

This Office Action has been issued in response to amendment filed 2 August 2006. Applicant's arguments have been carefully and fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Assar et al (U.S. 5,479,638). Accordingly, this action has **NOT** been made final.

Claim Status

Claims 1-10 remain pending and are ready for examination.

Drawings

The objections to the drawings set forth in the Office Action dated 9 December 2005 has been withdrawn in light of the instant amendment and drawings filed 9 May 2006.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims **1-4** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. As per claim **1**, claim 1 recites the limitation "the mapping information recorded in the alternative area from the mapping area" in lines 6-7. There is insufficient antecedent basis for this limitation in the claim. The Examiner notes that insofar as it appears to be clear, there is no positive recitation of mapping

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information being recorded in the alternative area. In lines 3-4, mapping information of the data block written to the alternative area is being recorded in a mapping area, but not specifically in the alternative area. If it is applicant's intent for mapping information to be recorded in the alternative area, it must be clearly stated. For purposes of examination, the Examiner is interpreting the applicant's to have meant that the mapping information is deleted/changed to point to the changed data. Any claim not specifically addressed is rejected at least by virtue of its dependency.

The 35 U.S.C. 112 2nd rejection set forth in the Office Action dated 9 December 2005 has been withdrawn in light of the instant amendment.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims **1-10** are rejected under 35 U.S.C. 102(b) as being anticipated by Assar et al (U.S. 5,479,638), hereinafter referred to as Assar.

As per independent claim **1**, Assar teach,

- if changing of data of a data block recorded in a data area is requested,
(Column 4 lines 28-31)
- recording the data block having changed data in an alternative area
(Column 4 lines 28-31) *The Examiner notes that the first writing of the document as taught by Assar is changing of a data block in a data area.*

- and recording mapping information of the data block recorded in the alternative area in a mapping area; (Column 4 lines 32-37)
- and if changing of data of the data block recorded in the alternative area is requested, (Column 4 lines 43-48)
- recording a data block having changed data in the data area and (Column 4 lines 48-50)
- deleting the mapping information recorded in the alternative area from the mapping area (Column 4 lines 53-58).

As per dependent claim 2, Assar teach, wherein the mapping information is a logical block number of the data block (Column 4 lines 31-32).

As per dependent claim 3, Assar teach, wherein if the changed data of the data block are recorded in the alternative area, the changed data are recorded in a temporary block of the alternative area (Column 4 lines 28-50). *The Examiner notes that the Assar teach recording of the changed data block in the data area. The purpose of wear leveling is to insure that every block in a data area are used an equal number of times. Subsequent writes/changes to the data block will place the data block in a different location. Accordingly, the data block is stored temporarily pending updates/changes.*

As per dependent claim 4, Assar teach, wherein if the changed data of the data block are recorded in the data area, the changed data are recorded in a location of the data area corresponding to a logical block number of the data block (Column 4 lines 31-32).

As per independent claim 5, Assar teach,

- receiving a data block write request in the flash memory; searching mapping information on the data block to be requested to write in the mapping area; if there is no mapping information on the data block to be requested to write, writing the data block to be requested to write in the alternative area and recording the mapping information on the data block in the mapping area; and if there is mapping information on the data block to be requested to write, writing the data block to be requested to write in the data area and deleting the mapping information on the data block to be requested to write from the mapping area. (Figure 5 as taught in Column 5 line 53 to Column 6 line 16).

As per independent claim 6, Assar teach,

- receiving a data block read request in the flash memory; searching mapping information on the data block to be requested to read in the mapping area; if there is no mapping information on the data block to be requested to read, reading the data block to be requested to read from the data area; and if there is mapping information on the data block to be requested to read, reading the data block to be requested to read from the alternative area. (Figure 8 as taught in Column 8 line 60 to Column 9 line 4).

As per independent claim 7, Assar teach,

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- a data area in which changed data of a data block are recorded when changing of data of a data block recorded in an alternative area is requested; (Column 6 lines 41-43)
- the alternative area in which the changed data of the data block are recorded when changing of data of the data block recorded in the data area is requested; and (Column 6 lines 41-43)
- a mapping area in which a mapping table containing mapping information of the data block recorded in the alternative area is recorded and from which the mapping information of the data block is removed when the changed data of the data block are recorded in the data area. (Column 6 lines 37-41)

As per dependent claim **8**, Assar teach, further comprising a master block containing information on the data area, the alternative area, and the mapping area (Column 4 lines 12-26).

As per dependent claim **9**, Assar teach, wherein a physical block number of the data block existing in the data area corresponds to a logical block number on a one-to-one basis (Figure 2 shown as the one to one relationship in the logical to physical address).

As per dependent claim **10**, Assar teach, wherein the alternative area includes a predetermined number of blocks, each of the blocks includes a predetermined number of pages, and a first mapping table is recorded in a first page of a first block, wherein if contents of the first mapping table are changed, the changed contents are stored in a

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second table, that is recorded in a second page of the first block, and if all of the pages of the first block have a mapping table recorded therein, a subsequent mapping table is recorded in a first page of a second block (Column 4 lines 28-50).

Response to Arguments

Applicant's arguments, filed 2 August 2006, have been fully considered and are persuasive. However, upon further consideration, a new ground(s) of rejection is made in view of Assar et al (U.S. 5,479,638). Accordingly, this action has NOT been made final.

Any argument not specifically addressed is considered moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew Bradley whose telephone number is (571) 272-8575. The examiner can normally be reached on 6:30-3:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Donald A. Sparks can be reached on (571) 272-4201. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

BRP/mb

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Brian R. Peugh
Primary Examiner

10/16/06